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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,802

12/02/2005

Satoshi Sugahara

125471

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25944 7590 11/30/2007
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EXAMINER

VALENTINE, JAMI M

ART UNIT

PAPER NUMBER

2815

MAIL DATE

DELIVERY MODE

11/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/551,802

Applicant(s)

SUGAHARA ET AL.

Examiner

Jami M. Valentine, Ph.D.

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-99 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 35, 46, 51, 54, 55, 57 and 61 is/are rejected.
- 7) ☐ Claim(s) 22, 36-45, 47-50, 52, 53, 56, 58-60 and 62-99 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/14/07.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Status of the Application

1. Acknowledgement is made of the amendment received 9/6/07. **Claims 1-51 and 54-99** are pending in this application. Claims 1-34 were previously withdrawn as being drawn to a nonelected group of claims. Claims 35, 37, 38, 40, 42, 43, 45-50, 56, 62-73 and 99 were amended and claims 52-53 were canceled in the amendment received 9/6/07.

Response to Arguments

2. Applicant's arguments filed 9/6/07 have been fully considered but they are moot in view of the new grounds of rejection.

Drawings

3. The objection to the drawings has been withdrawn in light of the amendment received 9/6/07.

Specification

4. The objections to the specification have been withdrawn in light of the amendment received 9/6/07.

Claim Objections

5. Claim 22 is objected to because of the following informalities: the preliminary amendment filed 9/30/05 amended claim 22 to recite "The memory element as claimed in claim 20, wherein..." In contrast, the amendment entered 9/6/07 recites claim 22 as "The memory element as claimed in claim 20 or 21, wherein..."

6. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The rejections under 35 U.S.C. 112, second paragraph have been withdrawn in light of the amendment received 9/6/07.

Claim Rejections - 35 USC § 102

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. **Claims 35, 46, 51, 54, 55, 57 and 61** are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshida et al. (US Patent Application Publication No 2005/0117617) hereinafter referred to as Yoshida.

10. Per **Claim 35** Yoshida (e.g. figure 2) discloses a device comprising

- a ferromagnetic semiconductor layer (1)
- a source (3) that injects carriers into the ferromagnetic semiconductor layer; and
- a drain (4) that receives the carriers injected into the ferromagnetic semiconductor layer
- a gate electrode (6) that applies a voltage for controlling conduction of the carriers flowing in the ferromagnetic semiconductor layer from the source to the drain.

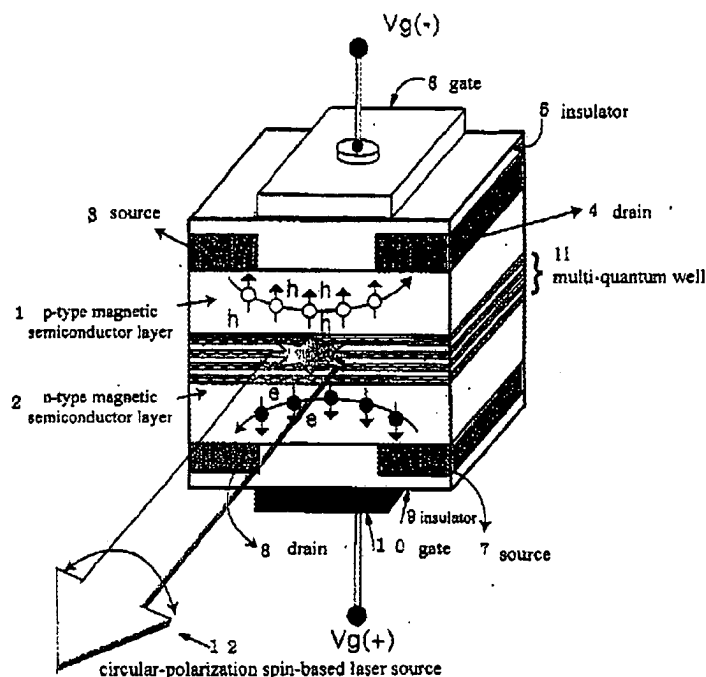
11. Per **Claim 46** Yoshida discloses the transistor of claim 35, including where the ferromagnetic semiconductor layer is a semiconductor with magnetic elements. [0067]

12. Per **Claim 51** Yoshida discloses the transistor of claim 35, including an insulating layer (5) is interposed between the gate electrode (6) and the ferromagnetic semiconductor layer (1).

13. Per **Claim 54** Yoshida discloses the transistor of claim 35, including where the transistor is formed on a substrate made of a semiconductor, a substrate having a semiconductor layer

formed thereon, or a substrate having an insulating layer formed thereon (e.g. figure 2).

Fig. 2



Prior Art: Yoshida Figure 2

14. Per Claims 55, 57 and 61 Yoshida discloses the transistor of claim 54, including where the transistor is formed on the substrate; the junction interface of the source and the drain in the vicinity of the gate electrode is substantially perpendicular (and parallel) to the principal surface of the substrate; and the flowing direction of the carriers moving from the source to the drain is in a plane substantially parallel (and perpendicular) to the principal surface of the substrate (e.g. figure 2, the junction interface of the source and the drain in the vicinity of the gate electrode is both parallel and perpendicular to the principle surface of the substrate; Additionally, the flowing direction of the carriers moving from the source to the drain is in both a plane substantially parallel and one substantially perpendicular to the principal surface of the substrate.

Cited Prior Art

15. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Reference 1: US Patent Application Publication No 2006/0043443 by Sugahara et al.

Allowable Subject Matter

16. Claims 36-45, 47-50, 52-53, 56, 58-60 and 62-99 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Application/Control Number:
10/551,802
Art Unit: 2815

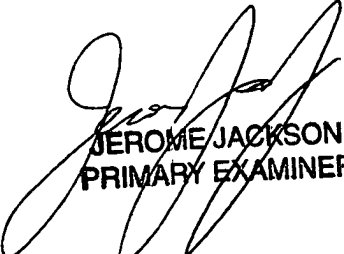
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jami M. Valentine, Ph.D. whose telephone number is (571) 272-9786. The examiner can normally be reached on Mon-Thurs 8:30am-7pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jami M Valentine, Ph.D.
Examiner
Art Unit 2815


JEROME JACKSON
PRIMARY EXAMINER